

1 **WHAT IS CLAIMED IS:**

- 2 1. A transmission apparatus to hold a lock core of a supplemental lock
- 3 and the transmission apparatus comprising:
 - 4 an inner housing having a front, a rear, a lock core chamber defined
 - 5 completely through the inner housing to define respectively a front opening and
 - 6 a rear opening respectively in the front and the rear of the inner housing to hold
 - 7 the lock core, and an inner shoulder formed adjacent to the rear opening;
 - 8 an inner disk rotatably mounted in the lock core chamber, abutting the
 - 9 inner shoulder in the inner housing and having an elongated central through hole;
 - 10 a lock coupler attached to the inner disk and comprising a rotatable outer
 - 11 disk coupler attached to the inner disk and two lock coupling arms extending
 - 12 from the outer disk coupler toward the inner disk and passing through the
 - 13 elongated central through hole in the inner disk;
 - 14 a latch bolt coupler rotated by the lock coupler and comprising a latch
 - 15 coupling arm with an inner end and an outer end being rotated by the lock
 - 16 coupler when the lock coupler is rotated by the lock core;
 - 17 a restitution element mounted around the latch coupling arm of the latch
 - 18 bolt coupler to provide a restitution force to hold the latch bolt coupler in place;
 - 19 and
 - 20 a cover attached to the rear of the inner housing, compressing the
 - 21 restitution element and having a latch coupling arm hole aligned with the outer
 - 22 end of the latch coupling arm to permit the outer end of the latch coupling arm to
 - 23 extend out of the inner housing.
- 24 2. The transmission apparatus as claimed in claim 1, wherein

1 the outer disk coupler has an outer semicircular coupling disk with a flat
2 edge and a radial extension protruding from the flat edge of the outer
3 semicircular coupling disk, wherein the lock coupling arms are attached to the
4 outer semicircular coupling disk alongside the radial extension over the flat edge;
5 and

6 the latch bolt coupler further comprises
7 an inner semicircular disk integrally formed at the inner end of
8 the latch coupling arm and abutting the outer semicircular coupling disk; and
9 a longitudinal tab protruding from the inner semicircular disk
10 toward the outer disk coupler over the radial extension of the outer disk coupler
11 and corresponding to the flat edge of the outer semicircular coupling disk
12 whereby the flat edge of the outer semicircular coupling disk will rotate the latch
13 coupling arm when the lock coupler is rotated by the lock core with the flat edge
14 pushing the longitudinal tab of the latch bolt coupler.

15 3. The transmission apparatus as claimed in claim 2, wherein the
16 restitution element is a coil spring.

17 4. The transmission apparatus as claimed in claim 3, wherein the rear
18 opening has a figure eight shape.

19 5. The transmission apparatus as claimed in claim 4, wherein
20 the inner housing further has two threaded mounting holes defined in the
21 rear; and

22 the cover further has two mounting through holes aligned respectively
23 with the threaded mounting holes so that the cover is fastened to the rear of the
24 inner housing by two fasteners.

1 6. The transmission apparatus as claimed in claim 5, wherein the
2 fasteners are bolts.